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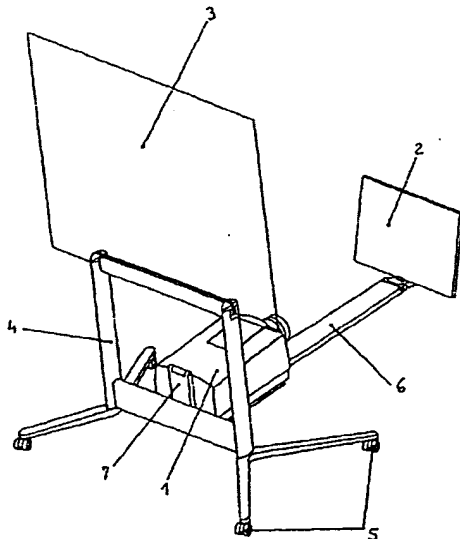
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(continued on next page)

(54) **Title:** PROJECTION WALL



(57) **Abstract:** The invention relates to a projection wall, comprising a projector (1), a deflecting mirror and an image panel (3) and characterized in that the projection wall is mobile. The arrangement of the projector, deflecting mirror (2) and image panel in relation to each other (2) can be optionally adjusted to an operating position or a transport position and the image panel has a sensitive, interactive surface for influencing the information that is displayed.

Projection wall

This invention relates to a projection wall with a projector, a deflecting mirror and an image panel.

5

Similar devices of the prior art include a projection wall with a projector, a deflecting mirror and an image panel, whereby the information to be displayed on the image panel (such as, for example, data, graphic images or other information) can be fed to the image panel by a computer that is in

10 communication with the projector. The image panel thereby performs the function of a display that is connected with the computer, whereby the image panel can be significantly larger than conventional computer display panels, and can be used for, among other things, the display of information to a group of people.

15 The object of the invention is a projection wall that can be used in a variety of different ways.

The invention teaches that this object can be achieved by the features disclosed in the characterizing portion of Claim 1.

20

Additional configurations of the invention are described in the subclaims.

The projection wall claimed by the invention consists essentially of a projector, a deflecting mirror and an image panel, whereby the projection wall is realized so
25 that it is mobile, and the relative arrangement of the projector, deflecting mirror and image panel can be moved optionally into an operating position or into a

transport position. The image panel also has a sensitive, interactive surface for influencing the data displayed thereon.

5 In an additional configuration of the invention, the image panel has a sensitive surface, in particular a touch-sensitive surface, for influencing the information displayed thereon. The image panel can have, for example, a pressure-sensitive, heat-sensitive, motion-sensitive, spatial resolution or resistance-sensitive interactive surface. It thereby becomes possible to access the information that is being displayed by the projector on the image panel directly, for example by
10 touching the surface.

In one particular configuration of the projection wall, it is possible to couple at least two image screens of two projection walls that are placed next to one another together to form a joint comprehensive image panel.

15

Additional advantages and configurations of the invention are described in greater detail below and are illustrated in the accompanying drawings, in which:

20 Figure 1 is a three-dimensional illustration of the projection wall in the operating position,

Figure 2 is a side view of the projection wall in the operating position,

Figure 3 is a side view of the projection wall in the transport position,

Figure 4 shows a first arrangement of a plurality of projection walls, and

5 Figure 5 shows a second arrangement of a plurality of projection walls.

The projection wall illustrated in Figures 1 to 3 consists essentially of a projector 1, a deflecting mirror 2 and an image panel 3, which are fastened to a common mounting frame 4.

10

The mounting frame has rollers 5 that provide mobility for the projection wall.

The deflecting mirror in turn is fastened to a swivel arm 6, which is mounted on the mounting frame 4 so that it can swivel around a swiveling axis 7. In the
15 illustrated exemplary embodiment, the projector 1 is also mounted on the swivel arm 6. By swiveling the swivel arm 6 around the swivel axis 7, the relative arrangement of the projector, deflecting mirror and image panel can optionally be moved into an operating position (Figure 1, Figure 2) or into a transport position (Figure 3).

20

If the deflecting mirror 2, as in the illustrated exemplary embodiment, is also fastened to the swivel arm 6 so that it can swivel, it can be folded into the transport position as illustrated in Figure 3.

25 The image panel is preferably oriented approximately vertically with respect to the support surface. The projector projects the image via the mirror 2 from

behind onto the image plate 3, so that the image on the image panel is then visible to an observer from the front.

For the display of the image projected from the projector via the deflecting mirror 5 12, the image panel can be formed, for example, by a glass panel coated with a holographic film.

To generate the image data to be presented, the projector 1 is advantageously connected to a computer. The computer, which is not shown in the
10 accompanying drawing, can optionally be fastened to the mounting frame or it can be set up remotely from the mounting frame. The connection between the computer and the projector can be a wired or wireless connection.

The image panel of the projection wall is provided on the side facing the observer
15 with a sensitive, interactive surface that can be used to influence the information presented on the image panel. For this purpose, the image panel can have, for example, a pressure-sensitive, heat-sensitive, motion-sensitive, spatial resolution or resistance-sensitive surface. The user of the projection wall can thus not only observe the data and information being presented, but via the image panel can
20 also directly influence the information displayed. This capability naturally requires that the sensitive surface be in communication with the computer, to create the necessary link between the image that is being displayed via the projector and the intervention via the sensitive surface.

The image panel 3 is therefore provided with a holographic surface on the one side and with a sensitive, interactive surface on the other side. The interplay between the two surfaces thus makes it possible to work interactively directly on the image panel.

5

The projection wall preferably has a transmitter unit, which is not shown in the accompanying drawing, to transmit data and a receiver unit to receive data.

The projection wall is also in communication with a computer, and means are provided for communication with the computer. These communication means can consist, for example, of a scale, by means of which the weight of an object placed on the scale is linked with data and/or information on the image panel. It is also possible to provide communication means for the identification of the user, in which case said communication means can consist at least partly of hardware.

15

As a result of the mobility of the projection wall, the projection wall can not only be used in a variety of applications, but it can also be combined with additional projection walls into an interlinked overall system. Figures 4 and 5 show two examples of such arrangements. In Figure 4, three projection walls have been set up next to one another, whereby the three image panels form a single joint image panel. For this purpose, each projection wall has means for coupling it to a neighboring image panel. These coupling means can be formed by mechanical, electrical, optical, acoustical and/or magnetic means. In this context,

20

combinations are also conceivable, such as an electromagnetic coupling, for example. However, the coupling between two or more image panels could also be realized by means of appropriate software, whereby the inputs required could be given directly via the sensitive, interactive surface of the image panel.

5

While in Figure 4, the image panels 3 are arranged in a plane, the image panels 3 in the arrangement illustrated in Figure 5 are arranged in a curve. Depending on the application, any other desired arrangement could also be used.

- 10 The projection walls described above can be used individually or in combination in a variety of ways. In addition to their use as conventional pinboards and whiteboards, the image panels can also be used for the display and editing of large drawings or diagrams. Graphic images and films can also be displayed without problems via the image panel. Video conferences, for example, could
- 15 also be held by using one or more image panels, which could be set up, for example, in the arrangement illustrated in Figure 5.

Claims:

1. Projection wall with a projector, a deflecting mirror and an image panel,
5 characterized by the fact

that the projection wall is realized so that it is mobile, whereby the relative
arrangement of the projector, the deflecting mirror and the image panel
can optionally be moved into an operating position or into a transport
10 position,

and that the image panel has a sensitive, interactive surface for
influencing the information displayed.
- 15 2. Projection wall as claimed in Claim 1, characterized by the fact that the
projector, the deflecting mirror and the image panel are fastened to a
common mounting frame.
3. Projection wall as claimed in Claim 2, characterized by the fact that the
20 mounting frame is realized so that it is movable.
4. Projection wall as claimed in Claim 2, characterized by the fact that the
deflecting mirror is fastened to a swivel arm which is mounted so that it
can swivel on the mounting frame, whereby the deflecting mirror can be
25 optionally moved into the operating or transport position by swiveling the
swivel arm.

5. Projection wall as claimed in Claim 4, characterized by the fact that the projector is also located on the swivel arm.
- 5 6. Projection wall as claimed in one or more of the preceding claims, characterized by means for coupling at least two image panels of two projection walls that are located next to one another together to form a joint comprehensive image panel.
- 10 7. Projection wall as claimed in one or more of the preceding claims, characterized by the fact that the projection wall is in communication with a computer.
- 15 8. Projection wall as claimed in Claim 1, characterized by the fact that the projector can be actuated and controlled by means of the computer.
- 20 9. Projection wall as claimed in one or more of the preceding claims, characterized by the fact that the projection wall is in communication with a computer and the image panel has a sensitive, interactive surface for influencing the information displayed, whereby the sensitive surface is in communication with the computer.
10. Projection wall as claimed in one or more of the preceding claims, characterized by the fact that the image panel has a holographic surface on its one side and a sensitive, interactive surface on its other side.

11. Projection wall as claimed in one or more of the preceding claims, characterized by the fact that the projection wall also has a transmitter unit to transmit data.
- 5 12. Projection wall as claimed in one or more of the preceding claims, characterized by the fact that the projection wall also has a receiver unit to receive data.
- 10 13. Projection wall as claimed in one or more of the preceding claims, characterized by the fact that the projection wall is in communication with a computer and that means are also provided for communication with the computer.
- 15 14. Projection wall as claimed in Claim 13, characterized by the fact that the communications means have a scale, by means of which the weight of an object placed on the scale is linked with data and/or information on the image panel.
- 20 15. Projection wall as claimed in Claim 13, characterized by the fact that the communication means are provided for the identification of the user, and are formed at least partly by hardware.

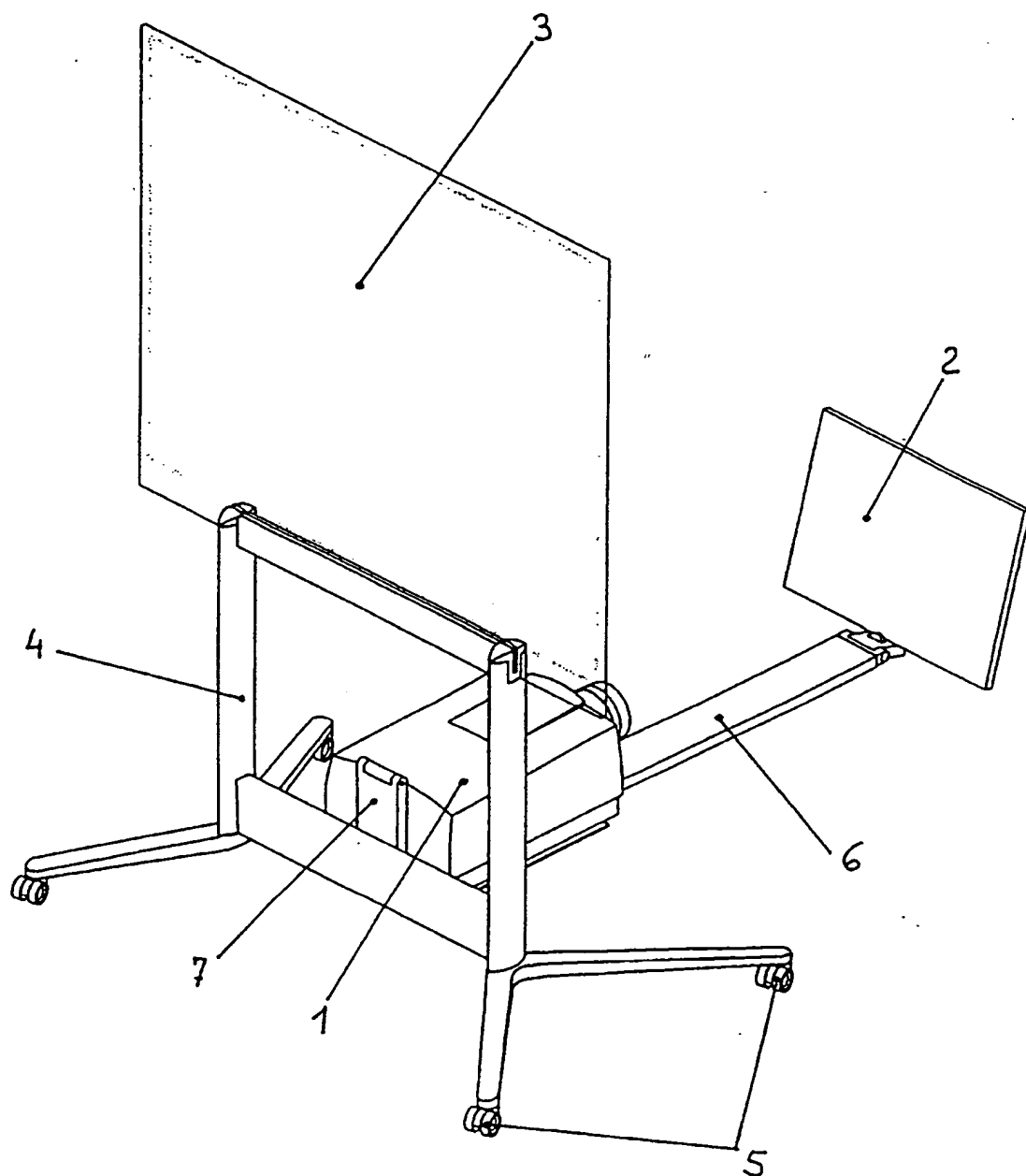


Fig.1

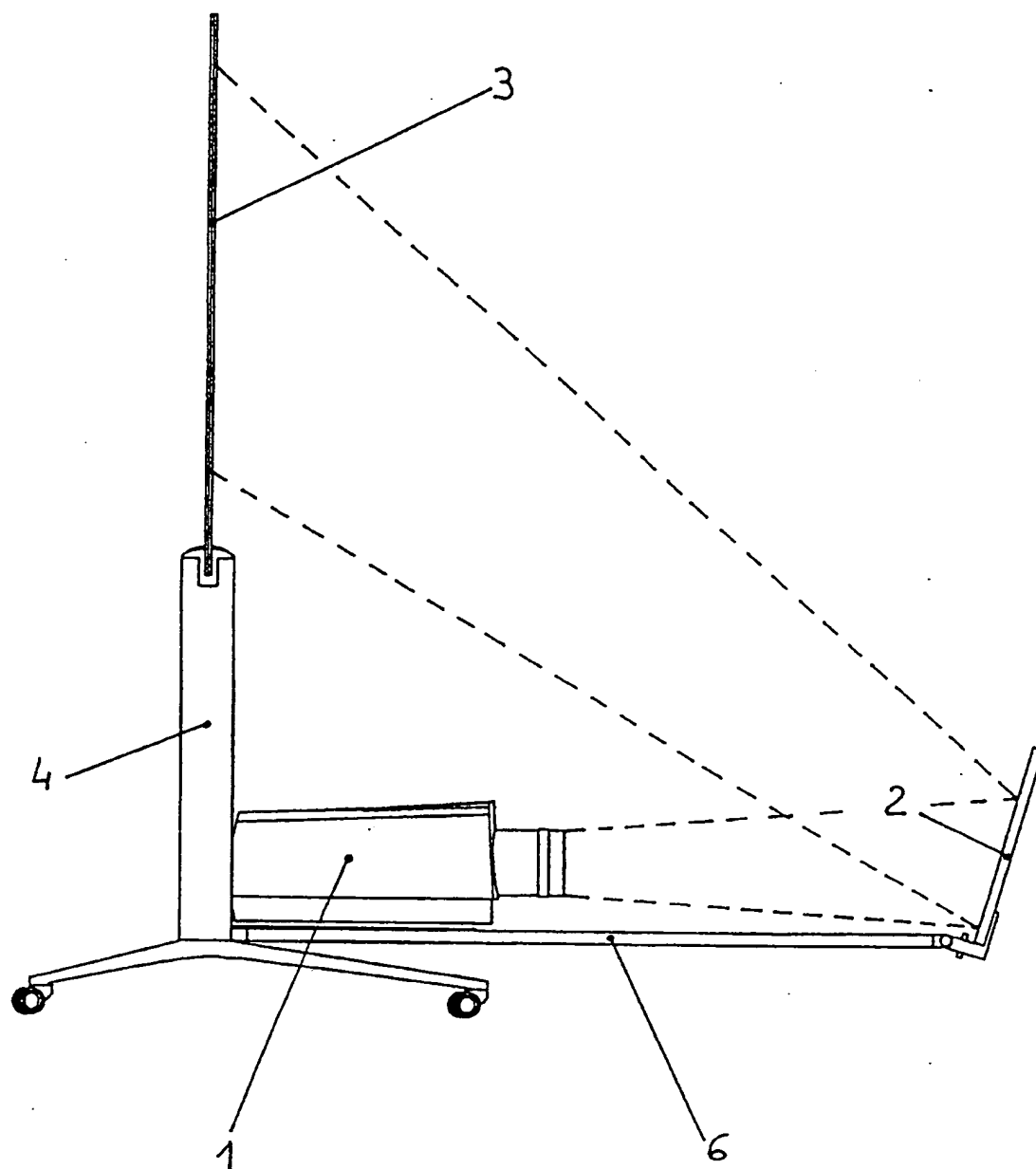


Fig. 2

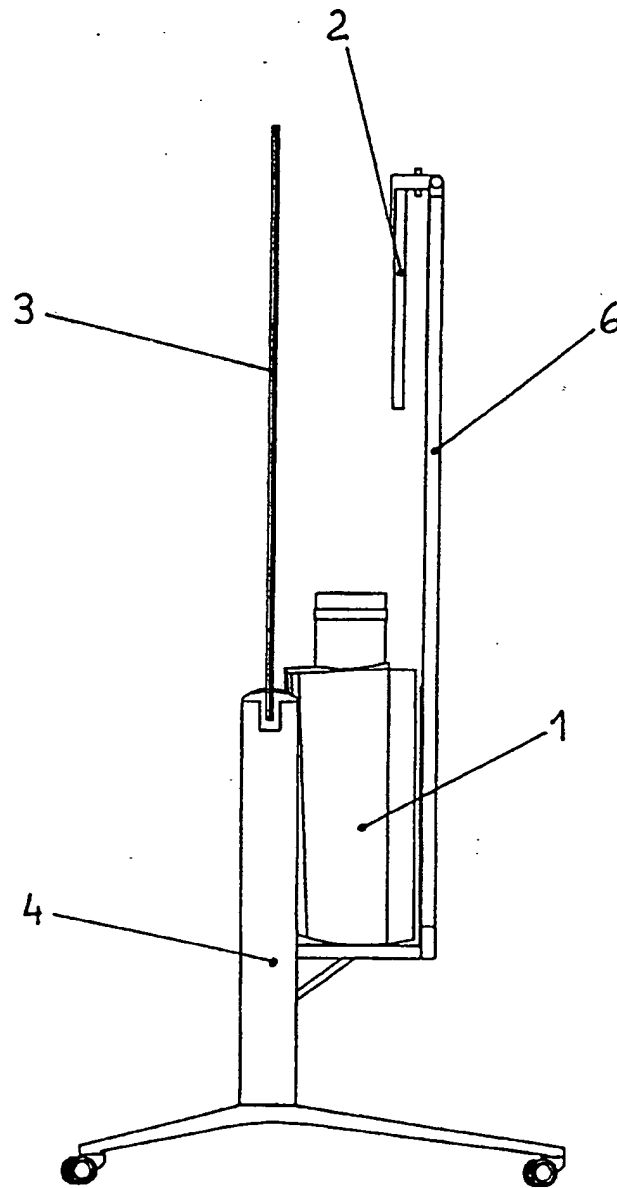


Fig. 3

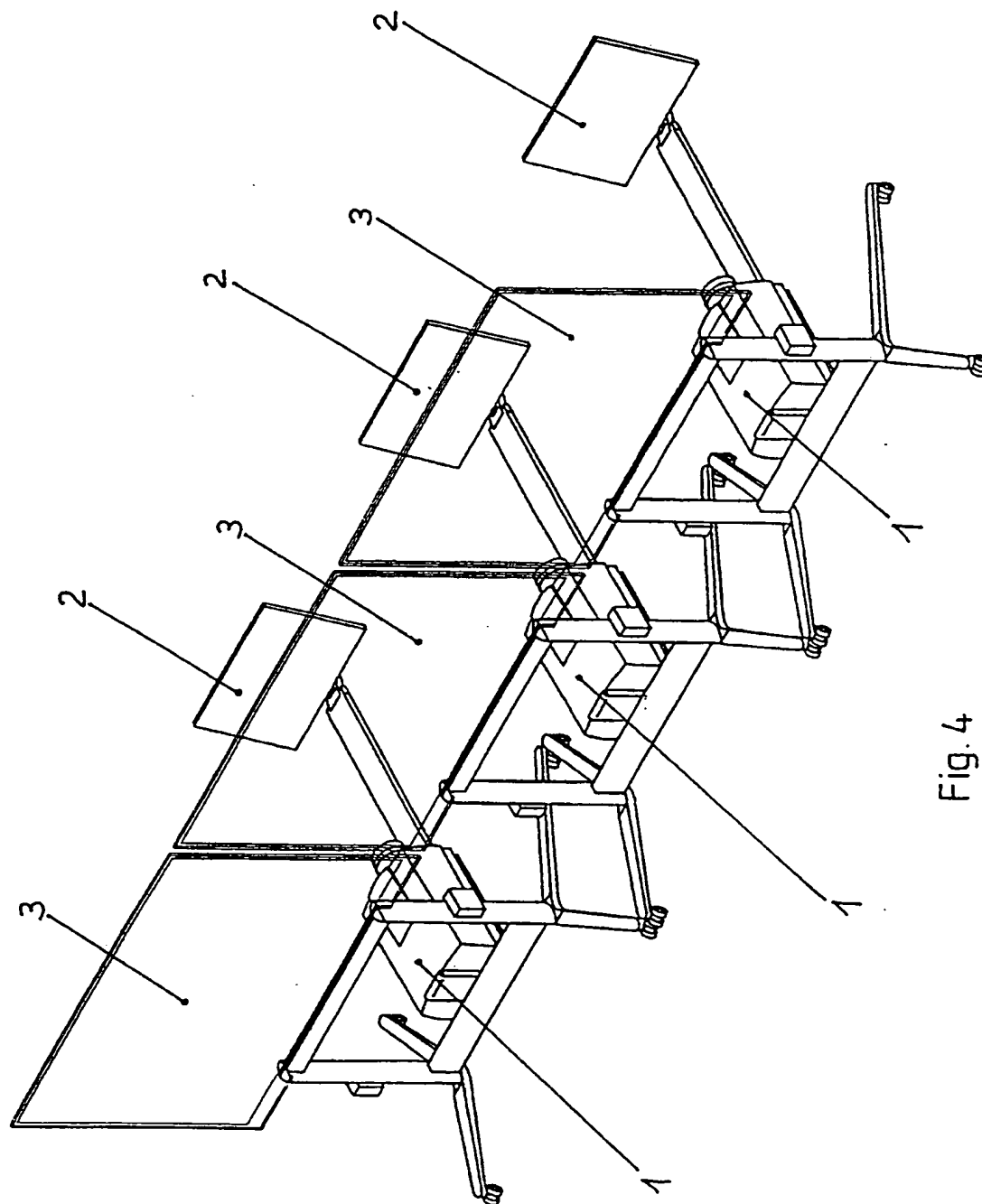


Fig. 4

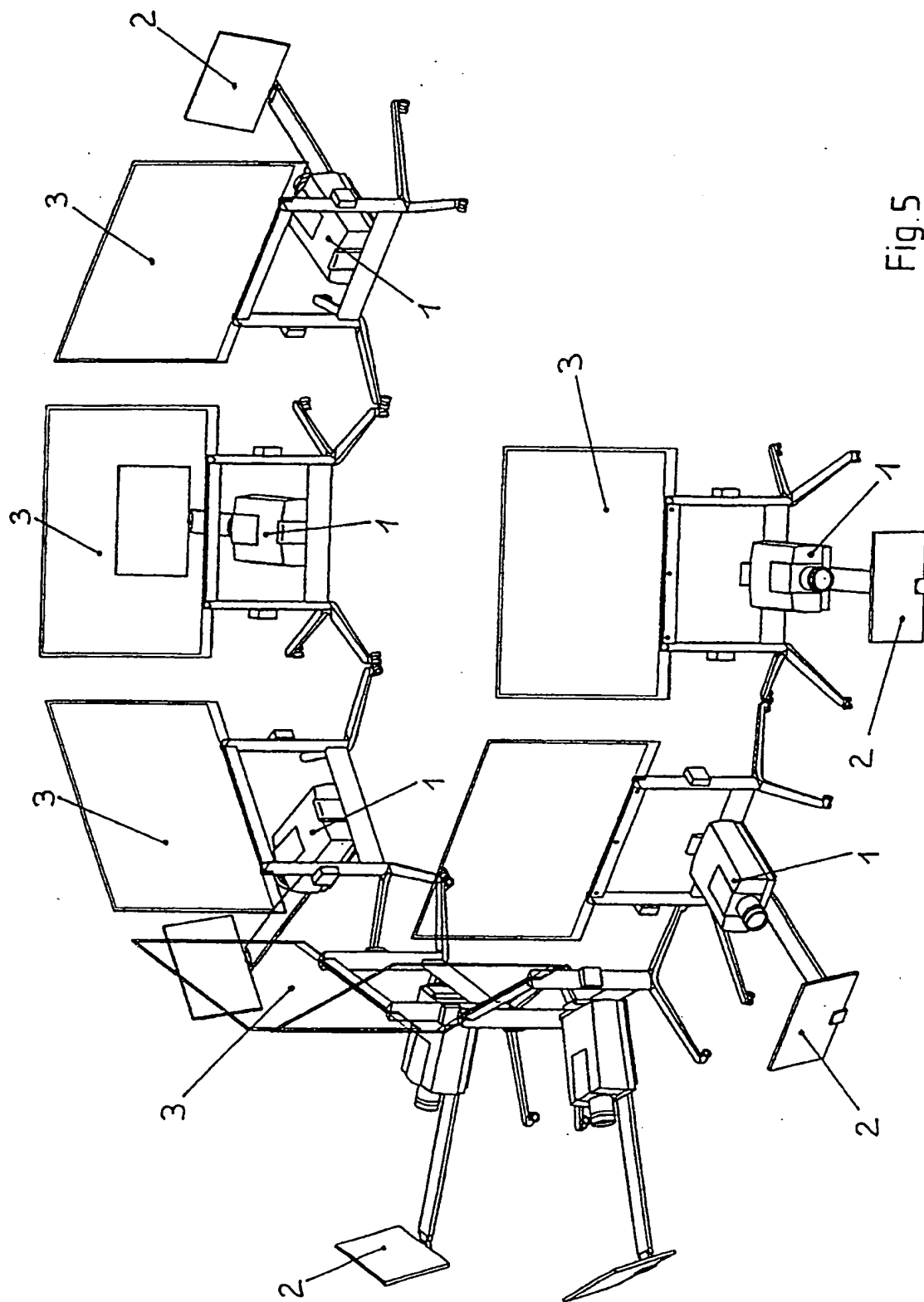


Fig. 5

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 00/10172

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G03B21/60 G03B21/28 G03B21/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G03B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 828 427 A (FARIS SADEG M) 27 October 1998 (1998-10-27)	1
A	abstract; figure 1	2-15
Y	US 5 639 152 A (NELSON BRIAN) 17 June 1997 (1997-06-17)	1
A	claim 1; figure 1	2-15
A	US 4 953 971 A (HIGHFILL ROBERT R) 4 September 1990 (1990-09-04)	1
	claim 1; figure 1	
A	US 4 846 694 A (ERHARDT HEINRICH S) 11 July 1989 (1989-07-11)	1
	abstract; figures 1,2	

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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US 4846694 A	11-07-1989	NONE	

INTERNATIONALER RECHERCHENBERICHT

Inter. nationales Aktenzeichen

PCT/EP 00/10172

A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES IPK 7 G03B21/60 G03B21/28 G03B21/30		
Nach der Internationalen Patentklassifikation (IPK) oder nach der nationalen Klassifikation und der IPK		
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C. ALS WESENTLICH ANGESEHENE UNTERLAGEN		
Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
Y	US 5 828 427 A (FARIS SADEG M) 27. Oktober 1998 (1998-10-27)	1
A	Zusammenfassung; Abbildung 1	2-15
Y	US 5 639 152 A (NELSON BRIAN) 17. Juni 1997 (1997-06-17)	1
A	Anspruch 1; Abbildung 1	2-15
A	US 4 953 971 A (HIGHFILL ROBERT R) 4. September 1990 (1990-09-04)	1
A	Anspruch 1; Abbildung 1	
A	US 4 846 694 A (ERHARDT HEINRICH S) 11. Juli 1989 (1989-07-11)	1
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Internationales Aktenzeichen

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US 4846694 A	11-07-1989	KEINE	

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